

REMARKS/ARGUMENTS

This communication is in response to the Advisory Action dated May 16, 2008 and Final Office Action dated February 5, 2008. Claims 21, 23 and 29 have been amended. Claim 22 has been canceled, without prejudice. No new matter has been added. Claims 21 and 23-32 remain pending in this application with claims 21 and 29 being the only independent claims. Reconsideration in view of the arguments presented below is respectfully requested.

No New Search and/or Consideration Required

Independent claims 21 and 29 have been amended to include the limitations previously set forth in dependent claim 22. Since claim 22 and the limitations contained therein were previously searched and independent claim 29 is merely the apparatus counterpart of method claim 22, Applicants submit that no new search and/or consideration is necessary. Entry of the amendments to the claims is therefore requested. Claim 23 has also been amended to clarify that proper antecedent basis for the term "additional information" is found in independent claim 21. This is a non-substantive amendment and therefore would also not necessitate a new search and/or consideration.

Prior Art Rejections

Claims 21, 23-26, 29-32 are rejected as being unpatentable over Masseroni et al. (EP 1 257 096) in view of Tong et al. (US Patent Publication No. 2003/0123414).

Claims 22 and 28 are rejected as being unpatentable over Masseroni et al. in view of Tong et al. and Tolli (US Patent Publication No. 2006/0014544).

Claim 27 is rejected as being unpatentable over Masseroni et al. in view of Tong et al., Tolli and Weigand (US Patent No. 6,963,554).

Applicants respectfully traverse the outstanding prior art rejections for the reasons provided below.

Independent Claims 21 & 29

Independent claim 21 has been amended to include from dependent claim 22 the limitations of “wherein the acquiring and evaluating step comprises comparing at the beginning of a Temporary Bit Flow (TBF) the number of the used Radio Link Control (RLC) blocks with an actually available and hence usable number of RLC blocks” and “identifying the number of parallel subscribers in the used timeslots based on the additional information contained in the RLC blocks.” The first limitation specifies comparing the number of the used RLC blocks at the beginning of “a Temporary Bit Flow (TBF)” with an actually available and usable number of RLC blocks, wherein the singular pronoun “a” specifies a single or particular TBF. Thus, this limitation implies that more than one RLC block may be associated with a single particular TBF. Paragraph [0025] of the specification of the present application acknowledges that more than one RLC block may be associated with a single or particular TBF by stating the following: “The subscriber-side measurement systems must determine at the beginning of the TBF, relative to the used timeslots, if all UL-RLC blocks were occupied only by that TBF until its end, or if other subscribers also used these UL-RLC blocks. The number of parallel, i.e., simultaneous ME/subscribers can then be determined from the number of different USF’s, allowing a conclusion about the multiuser behavior. This determination can also indicate the potential throughput.”

The Examiner acknowledges neither Masseroni et al. nor Tong et al. disclose these limitations but asserts that they are nevertheless taught by Tolli in paragraph [0036]. The relevant passage from paragraph 36 of Tolli reads “Alternatively, the monitoring and the parameter can be based on measuring the number of reserved TBFs (temporary block flow) compared to the total number of TBFs or number of TBF users in GSM or GPRS-based systems.” Applicants respectfully disagree with the Examiner’s position that counting of the total number of reserved TBFs and total number of TBF users is analogous to the number of used RLC blocks at the beginning of “a Temporary Bit Flow (TBF)”, i.e., a single TBF, and the number of actually available and usable RLC blocks, as claimed. The present claimed invention is distinguishable over the prior art of record in that it calls for at the beginning of a single TBF, comparing the number of the used Radio Link Control (RLC) blocks with an actually available and hence usable number of RLC blocks, whereas Tong discloses counting the total number of

reserved TBFs (e.g., multiple TBFs) and total number of TBF users (e.g., multiple TBF users). Furthermore, the mere counting of the total number of reserved TBFs and total number of TBF users, as taught by Tong, is not analogous to the claimed limitation for a particular single TBF, comparing the number of used RLC blocks with actually available usable number of RLC blocks, since more than one RLC block may be associated with a single TBF. Therefore, Tong fails to disclose or suggest counting more than one RLC block associated with a single TBF.

The other limitation added to claim 21 from dependent claim 22 calls for “identifying the number of parallel subscribers in the used timeslots based on the additional information contained in the RLC blocks.” Nothing in Tolli either discloses or suggest use of information contained in the RLC block itself, to identify the number of parallel subscribers in the used timeslots. The number of TBFs disclosed by Tolli and identified by the Examiner do not represent “information contained in the RLC blocks.” (emphasis added)

Furthermore, claim 21 is directed to “A method for detecting multiuser behavior on an aerial interface in GPRS and EGPRS mobile radio systems” including the step of “acquiring and evaluating during a transmission of subscriber data on an aerial interface, additional information contained in subscriber data by a device on a network side and/or a subscriber side, both in the uplink and the downlink; and identifying a number of parallel subscribers in used timeslots based on the additional information.” (emphasis added) Thus, what is being identified is the actual number of parallel subscribers in used timeslots,

The Examiner acknowledges that Masseroni et al. fails to teach this limitation but asserts that it is taught by Tong et al. “Tong discloses identifying a number of parallel subscribers in used timeslots based on the additional information (paragraphs 19, 20, 57, and 72, read as a plurality of bits to identify one or more user terminals for which the data in the HSD frame is intended).” (See February 5, 2008 Final Office Action: p. 8, ll. 10-12)(emphasis added) Tong et al. discloses “[A] header in each frame of the superframe indicates a data rate for the frame and the user terminal(s) for which data in the frame is intended.” (Paragraph [0019])(emphasis added) Just because the user terminals themselves are identified for which the data in the HSD frame is intended, there is no disclosure or suggestion for calculating from this information “a number of parallel subscribers in used timeslots.” (emphasis added) Even assuming, *arguendo*, that the number of parallel subscribers in used timeslots may be determined based on this

information in the header, the mere fact that the prior art reference is capable of being modified to identify the number of parallel subscribers in used timeslots does not establish a *prima facie* case of obviousness. The mere fact that references can be modified does not render the resultant combination obvious unless the results would have been predictable to one of ordinary skill in the art. See MPEP §2143.01 citing *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 USPQ2d 1385, 1396 (2007) Nothing in Tong et al. would disclose or suggest such a modification. Accordingly, Applicants submit that such modification is not predictable to one of ordinary skill in the art and thus the Examiner has failed to establish a *prima facie* case of obviousness.

Claim 29 is the apparatus counterpart of independent claim 21 and thus patentable over the prior art of record for at least the reasons expressed above with respect to claim 21.

Dependent Claim 23

Claim 23 includes the step of “evaluating parameters Uplink Status Flag (USF) and/or Temporary Flow Identifier (TFI) as additional information”. The terms USF and TFI are recognized terms in the art associated with GSPS systems. Masseroni et al. being directed to a GSM-GPRS system also employs an Uplink State Flag (USF) and Temporary Flow Identifier (TFI), however, the reference fails to disclose or suggest the use of these flags specifically for the detection of the number of parallel subscribers in used timeslots for a particular or single TBF, as found in claim 21, from which claim 23 depends.

The Examiner maintains that Masseroni et al. (paragraph 38 discloses this claimed limitation). (See February 5, 2008 Final Office Action: p. 8, ll. 17-20) Applicants respectfully disagree. The relevant passage of paragraph 38 from Masseroni et al. states “We can now better qualify the already mentioned PACKET UPLINK ASSIGNMENT message, sent by the network towards the mobiles, stating that it includes: the identified TFI of the downlink/TBF buffer containing the control block carrying this message, the list of the allocated PDCH channels (time slots), and a corresponding USF value for each allocated channel. Three bits are foreseen for the USF field that enable to unambiguously discriminate up to eight users sharing a time-slot, also in the borderline case in which the single TBF buffer are associated all the eight time slots of a FDMA frame.” This passage merely refers to the fact that USF and TFI are specified, but fails to

disclose or suggest that these flags are specifically used “as additional information” from which is determined the detection of the number of parallel subscribers in used time slots for a particular or single TBF, as found in claim 21, from which claim 23 depends.

In the “Response to Arguments” section of the outstanding Office Action the Examiner maintains that Masseroni discloses ‘evaluating parameters Uplink Status Flag (USF) and/or Temporary Flow Identifier (TFI) as additional information’ because in paragraph 39, Masseroni teaches that when it detects the presence of a USF belonging to the set among those assigned to it, an action is taken (i.e. evaluating), which is to enable the uplink TBF.” (February 5, 2008 Final Office Action: page 4, ll. 5-13) The disclosure in paragraph [0039] of Masseroni et al. of enabling the uplink TBF upon detecting the presence of a USF belonging to the set among those assigned to it fails to teach the claimed use of these flags specifically for the detection of the number of parallel subscribers in used timeslots for a particular or single TBF, as found in claim 21, from which claim 23 depends.

Dependent Claim 24

Claim 24 further calls for the step of “determining for the duration of an uplink TBF, how many USF’s are allocated by the network side” (emphasis added). The relevant passages of Masseroni et al. (Paragraphs 68, 72, 73, 93 and 94) referred to by the Examiner recognize the use of USF flags during uplink and storage in queues of these flags or those USF flags valid for uplink scheduling. Once again, the prior art reference fails to disclose or suggest determining the number of USF’s allocated by the network side, much less, making this determination for the duration of the uplink TBF, as found in claim 24.

Applicants assert that the Examiner has improperly interpreted these passages of the prior art reference which does not disclose the storage in the buffer UL_BUFFER_TS(j) of the number of USF flags, but instead teaches each of these buffers UL_Buffer_TS(j) contains the queues of the USF flag themselves.

In the “Response to Arguments” section of the outstanding Office Action the Examiner addresses this point. “Masseroni discloses that there is list of the allocated PDCH channels (time slots), and a corresponding USF value for each allocated channel (paragraph 38). Therefore, the network side knows the how many USF’s are allocated because it has a corresponding list of the

allocated time slots. In addition, Masseroni discloses that the TBF is kept alive only for the duration of the transfer so the USF value corresponds to the TBF.” (February 5, 2008 Final Office Action: page 4, ll. 16-20)(emphasis added) Once again the Examiner’s argument is that the number of used USFs is capable of being identified but fails to disclose or suggest such step nor does the prior art reference disclose a need or desire for doing so. The mere fact that references can be modified does not render the resultant combination obvious unless the results would have been predictable to one of ordinary skill in the art. See MPEP §2143.01 citing *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 USPQ2d 1385, 1396 (2007) Accordingly, Applicants submit that such modification is not predictable to one of ordinary skill in the art and thus the Examiner has failed to establish a prima facie case of obviousness.

Dependent Claim 25

Similarly, claim 25 calls for “determining for the duration of a downlink TBF, how many USF’s are allocated by the network side” (emphasis added). This claim is patentable over the prior art reference for the reasons provided above with respect to claim 24. Neither Masseroni et al. nor Tong et al. either discloses or suggests tabulating or keeping track of the number of USF’s allocated by the network side, much less, doing so for the duration of a downlink TBF, for reasons similar to those discussed above in claim 24 with respect to uplink.

In the “Response to Arguments” section of the outstanding Office Action the Examiner addresses this point. “Masseroni discloses that there is list of the allocated PDCH channels (time slots), and a corresponding USF value for each allocated channel (paragraph 38). Therefore, the network side knows the how many USF’s are allocated because it has a corresponding list of the allocated time slots. In addition, Masseroni discloses that the TBF is kept alive only for the duration of the transfer so the USF value corresponds to the TBF. Moreover, Masseroni discloses that the header of each RLC/MAC block transmitted on a PDCH channel in ‘downlink’ direction includes an additional field called USF, which is used by the network in the form of a flag to control the time division multiplexing of different mobile stations on a physical channel PDCH in uplink direction. Therefore, this procedure occurs for both uplink and downlink (paragraph 38).” (February 5, 2008 Final Office Action: page 5, ll. 1-10)(emphasis added) Once again the Examiner’s argument is that the number of used USFs is capable of being

identified but fails to disclose or suggest such affirmative step nor does the prior art reference disclose a need or desire for doing so. The mere fact that references can be modified does not render the resultant combination obvious unless the results would have been predictable to one of ordinary skill in the art. See MPEP §2143.01 citing *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 USPQ2d 1385, 1396 (2007) Accordingly, Applicants submit that such modification is not predictable to one of ordinary skill in the art and thus the Examiner has failed to establish a *prima facie* case of obviousness.

Dependent Claim 27

Claim 27 specifies “determining in a static allocation process, the usage of the timeslots for the RLC blocks by counting the data frames”.

Masseroni et al. is directed to a procedure for the scheduling of packet data transmission permits on radio channels shared by the mobiles in GSM-GPRS systems (Paragraph [0001]) and is limited exclusively to dynamic, rather than static, allocation of resources (see Paragraphs [0036]-[0037]). None of the prior art references disclose “in a static allocation process” determining “the usage of the timeslot for the RLC blocks”. Even assuming, *arguendo*, that the Examiner were to identify a reference teaching the usage of the timeslot for the RLC blocks in a static allocation process, the language in Masseroni et al. limiting the invention exclusively to dynamic, rather than static, allocation of resources, would teach away from any such modification. MPEP §2143.01(VI) Accordingly, so long as Masseroni et al. is the primary reference cited, the Examiner has failed to establish a *prima facie* case of obviousness.

Addressing the Examiner’s statements in the “Response to Arguments” section of the outstanding Office Action, the referral to the statement in paragraph [0036] that “The MAC protocol has also procedures for a fixed allocation of resources” quoted by the Examiner, the rest of this sentence reads “but these have no direct impact on the present invention.” Once again, Applicant’s maintain that the Masseroni et al. patented process for the scheduling of packet data transmission permits on radio channels shared by the mobiles in GSM-GPRS systems limited exclusively to dynamic, rather than static, allocation of resources.

Furthermore, the Examiner in rejecting the claim states “... Weigand discloses that this determination is based on counting the data frames (column 16 lines 55-60, read as the frame tick

count register can correspond to a predetermined offset to the end of the frame).” (See February 5, 2008 Final Office Action: p. 12, ll. 1-3) The relevant passage cited by the Examiner reads “The time base unit 520 also receives input from a frame tick count register 1007. The frame tick count register 1007 stores a frame count, whereon a frame tick is generated. The frame tick count register 1007 input is received by a comparator 1015. When the time base counter register 1010 is equivalent to the frame tick count register 1007 the comparator 1015 causes the time base unit 520 to generate a frame tick output.” Nothing in Weigand either discloses or suggests that the frame tick counter be used to correspond to a predetermined offset to the end of the frame nor that it be used to determine the usage of the timeslots for the RLC blocks, as claimed. The Examiner acknowledges this by stating that “the frame tick count register *can* correspond to a predetermined offset to the end of the frame” (emphasis added) despite the reference failing to disclose or suggest this limitation.

In the “Response to Arguments” section of the outstanding Office Action the Examiner responds by stating that Weigand was merely cited to show that counting data frames for various reasons is well known in the art. Furthermore, the Examiner asserts that “Masseroni discloses the usage of the timeslots for the RLC blocks when Masseroni teaches that the second case of allocation is limited to a pre-set number of RLC blocks (paragraph 38).” The actual passage from paragraph [0038] reads “A TBF can be of the ‘open ended’ or ‘closed ended’ type: in the first case the allocation takes place on an unlimited time basis, while in the second case the allocation is limited to a pre-set number of RLC blocks, this second opportunity can offer a more fair access to the transmission means during the highest loads of the service.” Once again this is referring to a predetermined allocation or assigning of PDCH channels (time slots) prior to usage not the actual usage of the timeslots for the RLC blocks by counting the data frames, as claimed.

Dependent Claim 28

Claim 28 includes the step of “evaluating for the entire lifetime of the respective uplink TBF and/or downlink TBF, the RLC data as well as the RLC/MAC control blocks for all TBF's in existence at that time and in all timeslots allocated to the respective TBF, and determining based on these data if multiuser operation has occurred at the time of data transmission.” Thus, two parameters must be evaluated: (i) the RLC data and RLC/MAC control blocks in existence

at that time; and (ii) the RLC data and RLC/MAC control blocks in all timeslots allocated to the respective TBF.

The Examiner acknowledges that these limitations are not taught by Masseroni et al. or Tong et al., and relies on Tolli for teaching this feature. Specifically, the Examiner asserts that this limitation is taught in paragraph 36 of Tolli when he states "read as the monitoring and the parameter can be base [sic] on measuring the number of reserved TBFs compared to the total number of TBFs or number of TBF users in GPRS-based systems...." (February 5, 2008 Final Office Action: p. 11, ll. 7-9)

Applicants respectfully traverse the Examiner's interpretation of this passage of Tolli which reads "Alternatively, the monitoring and the parameter can be based on measuring the number of reserved TBFs (temporary block flow) compared to the total number of the TBFs or number of TBF users in GSM or GPRS-based systems." Tolli discloses monitoring of TBFs, rather than RLC or RLC/MAC control blocks much less, (i) the RLC data and RLC/MAC control blocks in existence at that time; and (ii) the RLC data and RLC/MAC control blocks in all timeslots allocated to the respective TBF. Furthermore, nothing in any of the references either alone or in any combination thereof teach the monitoring of such parameters for determining if multiuser operation has occurred at the time of data transmission, as found in claim 28.

In the "Response to Arguments" section of the outstanding Office Action the Examiner addresses this point. "First of all, as stated in Masseroni, a RLC/MAC data block is identified to the TBF to which is associated through its own field where the identified TFI is written. So, if one is comparing TBFs, they are essentially comparing RLC/MAC blocks as disclosed in Masseroni. In addition, Tolli discloses monitoring (i.e. evaluating) the average experienced delay of the NRT users as well as the number of TBF users (i.e. multiuser operation). The experienced delay of the NRT users is caused by the multiuser operation or many mobile stations using the system." (February 5, 2008 Final Office Action: page 6, l. 5-12) Applicants disagree with the Examiner. Even assuming, *arguendo*, that comparing TBFs is analogous to comparing RLC/MAC blocks, none of the prior art references teaches identifying a number of parallel subscribers in used timeslots based on the additional information contained in the RLC blocks. Once again, the Examiner appears to be asserting that the number of parallel subscribers in used timeslots is capable of being determined from these parameters, but the prior art is silent as to an

affirmative step of doing so, much less, any need or desire for making such a determination.

CONDITIONAL PETITION FOR EXTENSION OF TIME

If entry and consideration of the amendments above requires an extension of time, Applicants respectfully request that this be considered a petition therefor. The Assistant Commissioner is authorized to charge any fee(s) due in this connection to Deposit Account No. 14-1263.

ADDITIONAL FEE

Please charge any insufficiency of fees, or credit any excess, to Deposit Account No. 14-1263.

Respectfully submitted,

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